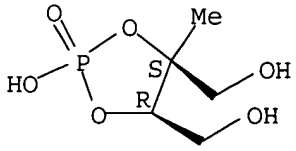
L7 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:674685 CAPLUS
DOCUMENT NUMBER: 140:300181
TITLE: Properties of 2-C-methyl-D-erythritol 2,4-cyclopyrophosphate, an intermediate in nonmevalonate isoprenoid biosynthesis
AUTHOR(S): Ostrovsky, D. N.; Dyomina, G. R.; Deryabina, Yu. I.; Goncharenko, A. V.; Eberl, M.; Shumaev, K. B.; Shashkov, A. S.
CORPORATE SOURCE: Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, 119071, Russia
SOURCE: Applied Biochemistry and Microbiology (Translation of Prikladnaya Biokhimiya i Mikrobiologiya) (2003), 39(5), 497-502
CODEN: APBMAC; ISSN: 0003-6838
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Extraction and purification from the biomass of **Corynebacterium** ammoniagenes of 2-C-methyl-D-erythritol 2,4-cyclopyrophosphate (MEC) was associated with its spontaneous transformation into a number of derivs. (which was due to the pyrophosphate bond lability and the formation of complexes with metals). These derivs. included 1,2-cyclophospho-4-phosphate, 2,4-diphosphate, 2,3-cyclophosphate, 1,4-diphosphate, and 3,5-diphosphate (identified by 1H, 31P, and 13C NMR spectroscopy) and accounted for about 10% of the MEC. When added to a solution of DNA in the presence of the Fenton reagent, MEC prevented DNA decomposition In addition, MEC slowed down the interaction of the reagent with tempol radicals, which indicates that complexation of ferrous ions by MEC attenuates their ability to catalyze the formation of hydroxyl radicals from hydrogen peroxide. In the presence of 0.23 mM MEC, the rate of respiration of rat liver mitochondria increased by 1.8 times. At 0.1-1.0 mM, MEC activated in vitro proliferation of human Vgamma9 T cells. It is suggested that MEC acts as an endogenous stabilizing agent for **bacterial** cells subjected to oxidative stress and as an immunomodulator for eukaryotic hosts.

IT **676657-08-2**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(properties of 2-C-methyl-D-erythritol 2,4-cyclopyrophosphate as intermediate in nonmevalonate isoprenoid biosynthesis in **Corynebacterium** ammoniagenes)
RN 676657-08-2 CAPLUS
CN 1,3,2-Dioxaphospholane-4,5-dimethanol, 2-hydroxy-4-methyl-, 2-oxide, (4S,5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:963357 CAPLUS
DOCUMENT NUMBER: 140:146391
TITLE: Efficient chemical synthesis of both anomers of ADP L-glycero- and D-glycero-D-manno-heptopyranose
AUTHOR(S): Zamyatina, Alla; Gronow, Sabine; Puchberger, Michael; Graziani, Andrea; Hofinger, Andreas; Kosma, Paul
CORPORATE SOURCE: Institute of Chemistry, University of Agricultural Sciences, Vienna, A-1190, Austria
SOURCE: Carbohydrate Research (2003), 338(23), 2571-2589
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:146391

AB A series of anomeric phosphates and ADP-activated L-glycero- and D-glycero-D-manno-heptopyranoses has been prepared in high overall yields, which provided model compds. and substrates in the elucidation of biosynthetic pathways and glycosyl transfer reactions of nucleotide-activated **bacterial** heptoses. The α-anomers of the heptosyl phosphates were obtained in high yield and selectivity using the phosphoramidite procedure, whereas the β-phosphates were formed preferentially employing acylation of reducing heptoses with di-Ph phosphorochloridate. An efficient route to the formation of the nucleotide diphosphate sugars was elaborated by coupling of the O-acetylated phosphates with AMP-morpholidate followed by alkaline deprotection to furnish ADP-L- and D-glycero-α-D-manno-heptose in 84 and 89% yield, resp. Deacetylation of the O-acetylated β-configured ADP heptoses was conducted at strictly controlled conditions (-28 °C at pH 10.5) to suppress formation of cyclic heptose-1,2-phosphodiesters with concomitant release of AMP. Isolation of the unstable β-configured ADP-heptoses by anion-exchange chromatog. and gel-filtration afforded ADP L- and D-glycero-β-D-manno-heptose in high yields.

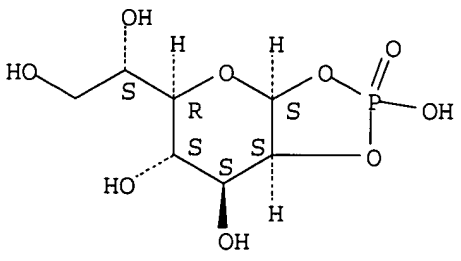
IT **651731-19-0P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of both anomers of ADP L-glycero- and D-glycero-D-manno-heptopyranose for use as substrate analogs for **bacterial** heptosyl transferases)

RN 651731-19-0 CAPLUS
CN L-glycero-β-D-manno-Heptopyranose, cyclic 1,2-(hydrogen phosphate), compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)

CM 1

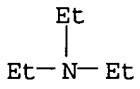
CRN 322640-47-1
CMF C7 H13 O9 P

Absolute stereochemistry.



CM 2

CRN 121-44-8
CMF C6 H15 N

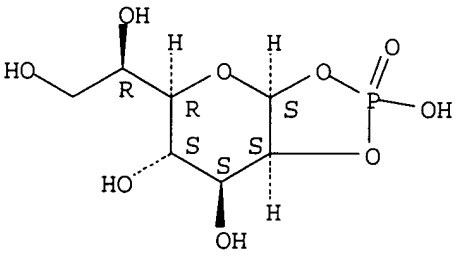


IT **651731-24-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of both anomers of ADP L-glycero- and D-glycero-D-manno-heptopyranose for use as substrate analogs for **bacterial** heptosyl transferases)
RN 651731-24-7 CAPLUS
CN D-glycero-β-D-manno-Heptopyranose, cyclic 1,2-(hydrogen phosphate), compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 651731-23-6
CMF C7 H13 O9 P

Absolute stereochemistry.



CM 2

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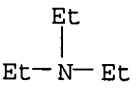
CMF C6 H15 N



REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

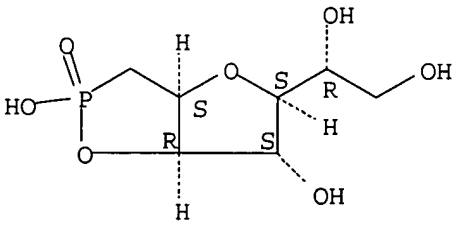
L7 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:1866 CAPLUS
DOCUMENT NUMBER: 140:181700
TITLE: Synthesis and inhibition properties of conformational probes for the mutase-catalyzed UDP-galactopyranose/furanose interconversion
AUTHOR(S): Caravano, Audrey; Mengin-Lecreulx, Dominique; Brondello, Jean-Marc; Vincent, Stephane P.; Sinay, Pierre
CORPORATE SOURCE: Departement de Chimie, UMR-8642 du CNRS, Ecole Normale Superieure, Paris, 75231, Fr.
SOURCE: Chemistry--A European Journal (2003), 9(23), 5888-5898
CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:181700

AB UDP-galactose mutase is a flavoenzyme that catalyzes the isomerization of UDP-galactopyranose into UDP-galactofuranose, a key step in the biosynthesis of important **bacterial** oligosaccharides. Several mechanisms for this unique ring-contraction have been proposed, one of them involving a putative 1,4-anhydrogalactopyranose as an intermediate in the reaction. The purpose of this study was to probe the mutase binding site with conformationally restricted analogs of its substrate. Thus, we describe the straightforward synthesis of two C-glycosidic UDP-galactose derivs.: analog (I), presenting a galactose moiety locked in a bicyclic 1,4B boat conformation, and UDP-C-Galf (II), where the galactose residue is locked in the conformation of the mutase substrate. The two mols. were found to be inhibitors of UDP-galactose mutase at levels depending on the redox state of the enzyme. Strong inhibition of the native enzyme, but a low one of the reduced mutase, were observed with II, whereas I displayed intermediate inhibition levels under both native and reducing conditions. These data provide evidence of a significant conformational difference of the mutase binding pocket in the reduced enzyme and in the native one, the enzyme switching from a low Galf-affinity state (reduced enzyme) to a very strong one (native enzyme). It is remarkable that the mutase binds the boat-locked analog I with similar affinities in both its conformational states. These results support a mechanism involving the formation of 1,4-anhydrogalactopyranose as a low-energy intermediate. An alternative explanation would be that the distortion of the galactose moiety during the cycle contraction transiently brings the carbohydrate into a conformation close to a 1,4B boat.

IT **659721-40-1P**
RL: BYP (Byproduct); PREP (Preparation)
(preparation of and UDP-galactose mutase inhibition by C-glycosidic UDP-galactose derivs. with fixed configurations)

RN 659721-40-1 CAPLUS
CN 1,2-Ethanediol, 1-[(3aS,5S,6S,6aR)-hexahydro-2,6-dihydroxy-2-oxidofuro[2,3-d]-1,2-oxaphosphol-5-yl]-, (1R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:4863 CAPLUS
DOCUMENT NUMBER: 138:65619
TITLE: Antimicrobial acesulfame complexes, their preparation and their use in oral hygiene
INVENTOR(S): Burgard, Andreas
PATENT ASSIGNEE(S): Nutrinova Nutrition Specialties & Food Ingredients GmbH, Germany
SOURCE: Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1270580	A1	20030102	EP 2002-12476	20020612
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10130298	A1	20030123	DE 2001-10130298	20010622
US 2003023084	A1	20030130	US 2002-165398	20020607
US 6759544	B2	20040706		
JP 2003012657	A2	20030115	JP 2002-180268	20020620

PRIORITY APPLN. INFO.: DE 2001-10130298 A 20010622
OTHER SOURCE(S): CASREACT 138:65619

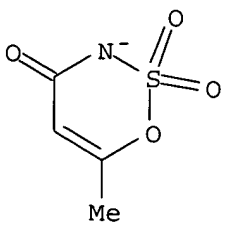
AB Transition metal (Ag, Cu, Zn) complexes of acesulfame and cetylpyridinium acesulfame were prepared and have **antibacterial** activity that makes the complexes and cetylpyridinium acesulfame useful for oral hygiene. For example, acesulfame (HL) reacted with ZnSO4.7H2O in presence of CaCO3 or BaCO3 in solution to give ZnL2(OH2)2. CuL2(OH2)3 and Ag2L2(OH2) were also prepared The crystal structures of the 3 complexes were determined

IT **479620-35-4P**
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of cetylpyridinium acesulfame with **antibacterial** activity for use in oral hygiene)

RN 479620-35-4 CAPLUS
CN Pyridinium, 1-hexadecyl-, salt with 6-methyl-1,2,3-oxathiazin-4(3H)-one 2,2-dioxide (1:1) (9CI) (CA INDEX NAME)

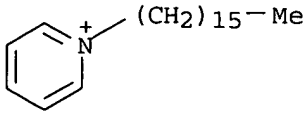
CM 1

CRN 119441-67-7
CMF C4 H4 N O4 S



CM 2

CRN 7773-52-6
CMF C21 H38 N


(CH2)15—Me
N+